

double exposure which comprises a first step for exposing the insulator with a normal mask with original via size and a second step for exposing the insulator with the mask with larger via size. The order of these two masks being used can be reversed.

- The probability that different contaminations hit the same location is negligible and thus the pin-holes can be eliminated effectively by exposing the insulator twice with the different masks.
- The reason why the two masks should have different via sizes is from the tolerance of mask positioning. The second mask has to have larger via size to maintain the via size formed by the first mask.
- This method is applicable for any negative photo-sensitive polymers, for example, etching resist, pattern plating resist and so on.

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Insulator for Pin-Hole
Elimination

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DISCLOSURE TEXT:

Disclosed is an exposure method for reducing defects of
PCB

(Printed Circuit Board) with photo via holes formed by
a

negative-type photo-sensitive dielectric. For negative
type

photo-sensitive dielectric, contamination at exposed
regions causes

defects such as pin-holes. Such defects can be solved
by double

exposure with different masks.

- In a photo process in which a negative-type
photo-sensitive

insulator is used to define vias, contamination on the
mask, mask

cover film or other parts which lie in the light path
results in the

formation of pin-holes in the insulator. These
pin-holes become

serious defects from the point of reliability and
electrical

performance.

- The defects caused by such contamination can be
eliminated by